Petr Stepanov

Software developer. User interface designer.

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> **Ph.D. graduate** in physics with a focus in GUI **desktop software development** for data analyses. More than 5 years in website and **web applications development**. Strong **user interface** (UI) and **user experience** (UX) design skills.

Summary of Qualifications

- Strong Object Oriented Programming (OOP) and debugging skills (C++, Java, Python). Knowledge of modern IDEs (Eclipse, XCode, VSCode).
- 3+ years in building responsive web apps with modular JavaScript, HTML, and CSS. Hands-on experience with Angular and React frameworks.
- 5+ years of user interfaces (UI) with Model-View patterns (MVC, MVP). Application of Qt framework for UI development.
- 6+ years of UI and UX wireframing and interactive prototyping skills (Figma, Sketch, Adobe, PenPot) for web and mobile applications.

Work Experience

C++ Software Developer

Thomas Jefferson National Laboratory (JLab), Newport News, VA, USA.   **Jul 2020 - Current**

- Coded a Geant4-based sumulation for studying the optimal light guide length (range 0-10 cm) for the EM calorimeter used in the Electron-Ion-Collider (EIC) project. Link to GitHub.
- Used Machine Learning (ML) techniques to perform binary classification of thousands of signals from a data acquisition (DAQ) setup. Link to GitHub.
- Applied CERN ROOT framework (C++) to perform statistical analysis of a significant amount (over 100 GB) of the raw experimental data of the Kaon LT experiment at JLab. Link to GitHub.
- Utilized SLURM supercomputer environment to run programs on the JLab supercomputer environment simultaneously. This reduced the wall time by more than 10 times.
- Proposed and implemented RAMDisk functionality on the development environment. This led to an over 50% increase in source code indexing time.

Software Developer · Postdoctoral Researcher

Catholic University of America (CUA), Washington, DC, USA.   **Jul 2020 - Current**

- Programmed a Geant-4 computer simulation (C++, CMake, Eclipse IDE, gdb) to study performance of a novel scintillation material for EIC, Brookhaven National Lab. Link to GitHub.
- Visualized energy deposition profiles and calculated energy resolutions for variety of detector assemblies.
- Enhanced debugging of the core library source code led to the publishing of more than 10 bug reports on the ROOT (C++) forum.

Software Developer · Research Assistant

Bowling Green State University (BGSU), Bowling Green, OH, USA.   **Aug 2014 - May 2020**

- Wrote three desktop GUI programs for spectra fitting and interpretation (C++, CMake, ROOT, Qt, Java)
- GitHub repositories contain over 10k lines of code in total: TLIST Processor, SW Calculator, RooPositron.
- Extended default ROOT GUI library (Qt-based) to support the MVP design pattern.
- Developed static website (Hexo, Gulp, Bootstrap) and visual identity for the SelimLab research group. The website has a 99% Google performance rank and features 700 ms time to interactive metrics.
- Maintained local Apache HTTP server physics.bgsu.edu hosting over 10 websites at the BGSU.
- Created website for the ICPA-18 international conference with registration (over 150 users) and payment system workflow (WordPress, PHP, Recurly.js), and landing pages for events.

Frontend Developer, UI/UX Designer · Freelance   **Sep 2012 - May 2020**

- Designed and built an online e-commerce store Sticker Store LLC with a static website generator (Figma, Hexo, Snipcart, Bootstrap, SASS, Express.JS, EJS, Node.js).
- Improved the Google PageSpeed Insights metrics (CLS, LCP) up to 97%.
- Created a recursive script to export over 300 products from YAML file to Google Merchant.
- Optimized SEO. The project reached over 1400 organic monthly users.
- Made iOS application (Swift, UIkit, storyboards) for the We.Team messenger (more than 3k monthly downloads in AppStore). Participated in cloud-based messenger development with enhanced file sharing capabilities (HTML, React JS, SASS).
- Migrated the landing page for Sweetbridge company from WordPress to Jekyll static site generator (Ruby, CSS). This resulted in a 70% improvement in the page load time.
- Developed the front-end part (Angular.js, HTML, LESS) for Lili Social network.
- Assisted with iOS mobile application (Ionic).
- Enabled SEO crawling of over 1000 Angular.js pages with Google bot.
- Web design.
- Designed logos, UI/UX prototypes (Figma, Sketch, Illustrator) and branding identity for over 10 different companies.
- Converted numerous design assets and mockups into responsive HTML and CSS.
- Mocked up and integrated dozens of cross-browser responsive email templates.

Computer Science Skills

- **Essentials**. Git, SVN, SSH, Linux, and Terminal usage. BASH scripting. IDEs: Eclipse, Xcode, Visual Studio Code (VS Code).
- **Project management**. JIRA, Trello, GitHub, GitLab.
- **Desktop app development**. C/C++, GNU make, CMake. Frameworks: Qt, CERN ROOT, Geant4. Java and Swing. Python.
- **Frontend**: HTML, CSS (LESS and SASS), Bootstrap, responsive web design, JavaScript and jQuery, npm, gulp, AngularJS, React.js. Google Web Toolkit. PHP and WordPress themes development.
- **Backend**. Node.js, Express.JS (EJS), Java.
- **UI/UX design**. Figma, Sketch, InVision Studio, Adobe XD, Adobe Photoshop, Adobe Illustrator, Inkscape, Balsamiq, Blender.
- **Apple iOS**. Fundamental Swift skills. User interface development with UIkit and storyboards.

Education

Bowling Green State University (BGSU) • Ohio, USA   **Aug 2014 - May 2020**
Ph.D. in Photochemical Sciences • GPA 3.423. Novel developments in positron annihilation spectroscopy techniques—from experimental setups to advanced processing software. View manuscript.

British Higher School of Art and Design (BHSAD) • Moscow, Russia   **Dec 2011 - Feb 2012**
Three-month intensive in Graphical Design and Visual Communications. Lectures and hands-on experience in graphic design and user interfaces.

Professional Networks

- Find examples of my code on GitHub (50+ repositories).
- Discover my professional contacts on LinkedIn (200+ connections).
- Check out my UI design portfolio on Dribbble (50+ shots).

Interests

- Hosting an open-source project for keyboard remapping on Linux 300+ stars on GitHub.
- Contributing to the C++ open source framework ROOT. Created two shared libraries to facilitate data analysis. Links to GitHub: CanvasHelper and RootUtils.